

## REMARKS

This is intended as a full and complete response to the Office Action dated July 21, 2003, having a shortened statutory period for response set to expire on October 21, 2003. Please reconsider the claims pending in the application for reasons discussed below.

Claims 15, 17-27, 29-38, and 40-45 remain pending in the application and are shown above. Claims 15, 17-27, 29-38, and 40-45 are rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Applicants have amended claim 44 to correct a typographical error. Applicants submit that the changes made herein do not introduce new matter.

Claims 31-37 stand rejected under 35 U.S.C. § 112, second paragraph. The Examiner states that it is unclear what is meant by "as a function of the location (x1, x2) of the emitted secondary particles relative to the position of the detector." Applicants have amended claim 31 to clarify that it is the means that are provided for guiding the secondary particles from the substrate to the detector that are controlled based on the location (x1, x2) of the emitted secondary particles relative to the position of the detector. Applicants submit that the changes made herein do not introduce new matter. Applicants respectfully request withdrawal of the rejection of claim 31 and of claims 32-37, which depend thereon.

Claims 39-40 are rejected under 35 U.S.C. § 112, second paragraph. The Examiner states that the language "is taken into account...evaluation" is considered vague and indefinite language. Applicants have amended claim 38 by removing the phrase "is taken into account...evaluation" and specifying that the location (x<sub>1</sub>, x<sub>2</sub>) of the secondary particles emitted on the substrate relative to the position of the detector is used to produce a detector signal which is compared with a desired signal for the location during testing and evaluation. Applicants have canceled claim 39 which corresponds to claim 38 as amended. Applicants submit that the changes made herein do not introduce new matter. Applicants respectfully request withdrawal of the rejection of claim 38 and of claim 40, which depends thereon.

Claims 15, 17-27, 29-38, and 40-45 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Meisburger* (U.S. Patent No. 5,665,968), in view of *Libby, et al.* (U.S. Patent No. 6,497,194) *Nisch, et al.* (U.S. Patent No. 6,218,663) or *Garth, et al.* (U.S. Patent No. 4,658,137). Applicants respectfully traverse the rejection.

Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest comparing signals produced in response to the detection of secondary particles emitted from selected sites on a substrate with a selected predetermined reference signal. Therefore, *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest a method of testing a substrate comprising directing a particle beam onto said substrate in such manner as to cause secondary particles to be emitted from any selected one of a plurality of sites on said substrate, wherein the directing a particle beam includes deflecting said particle beam from one selected site to another, guiding at least some of the secondary particles from said one selected site to a signal detector spaced from said one selected site, generating signals in response to the detection of the detected secondary particles, said generated signals having values which vary in response to changes in the space between said detector and different ones of said selected sites, and comparing the respective signals produced in response to the detection of said detected secondary particles from each of said selected sites with a selected predetermined reference signal, as recited in claim 15, and claims dependent thereon. Withdrawal of the rejection of claims 15 and 17-25 is respectfully requested.

Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest an apparatus comprising means for comparing signals produced in response to the detection of secondary particles from each of the selected sites on a substrate with a selected predetermined reference signal. Therefore, *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest an apparatus for testing a substrate comprising means for producing a particle beam, means for directing said beam along a first path to a selected one of a plurality of sites on said substrate whereby secondary particles are produced and emitted along a second path by said substrate at said selected one of said sites, means for deflecting said particle beam from said one of said

selected sites to another of said selected sites, secondary particle detecting means spaced from said selected one of said sites, means for guiding secondary particles from said selected one of said sites to said detector means, said detector means being operable to generate a signal having a value which varies in response to differences in the space between said detector and said selected one of said sites, and means for comparing the respective signals produced in response to the detection of said detected secondary particles from each of said selected sites with a selected predetermined reference signal, as recited in claim 26, and claims dependent thereon. Withdrawal of the rejection of claims 26, 27, and 29-30 is respectfully requested.

Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest taking into account during testing the location of secondary particles emitted on the substrate relative a position of a detector that detects the secondary particles and controlling means for guiding the secondary particles from the substrate to the detector based on the location of the emitted secondary particles relative to the position of the detector. Therefore, *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest a method of testing a substrate, in which a particle beam is directed onto the substrate and emitted secondary particles are detected with a detector and then evaluated, characterized in that the location ( $x_1$ ,  $x_2$ ) of the secondary particles emitted on the substrate relative to the position of the detector is taken into account during testing, whereby means are provided for guiding the secondary particles from the substrate to the detector, these means being formed of a plurality of plate-shaped deflection electrodes, and these means being controlled as a function of the location ( $x_1$ ,  $x_2$ ) of the emitted secondary particles relative to the position of the detector, and whereby the means for guiding the secondary particle are located below the detector, as recited in claim 31, and claims dependent thereon. Withdrawal of the rejection of claims 31-37 is respectfully requested.

Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest comparing during testing and evaluation a detector signal from secondary particles emitted on a substrate with a desired signal, wherein the detector signal and the desired signal are based on location

of the secondary particles emitted on the substrate. Therefore, *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest a method of testing a substrate, in which a particle beam is directed onto the substrate and emitted secondary particles are detected with a detector and then evaluated, characterized in that the location ( $x_1$ ,  $x_2$ ) of the secondary particles emitted on the substrate relative to the position of the detector is used to produce a detector signal which is compared with a desired signal for the location during testing and evaluation, as recited in claim 38 and claims dependent thereon. Withdrawal of the rejection of claims 38 and 40 is respectfully requested.

Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest an apparatus including a control arrangement that controls means for guiding secondary particles emitted on a substrate to a detector as a function of the location of the emitted secondary particles. Therefore, *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest an apparatus for testing a substrate, comprising means for producing a particle beam, a detector for detecting secondary particles emitted on the substrate by the particle beam and for producing a detector signal, means for guiding the secondary particles to the detector, and an arrangement for evaluation of the detector signal, characterized in that the means for guiding secondary particles emitted on the substrate to the detector are formed of a plurality of plate-shaped electrodes, a control arrangement is provided which controls the means for guiding the secondary particles as a function of the location of the emitted secondary particles in such a way that a detector signal is produced which is independent of the location, and the means for guiding secondary particles emitted on the substrate to the detector are located below the detector, as recited in claim 41 and claims dependent thereon. Withdrawal of the rejection of claims 41-43 is respectfully requested.


Applicants submit that *Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach or suggest controlling means for evaluation of a detected signal from secondary particles emitted on a substrate such that the location of the emitted secondary particles relative to the detector that detects the signal is taken into consideration during the evaluation of the detector signal. Therefore,

*Meisburger*, alone or in combination with *Libby, et al.*, *Nisch, et al.*, or *Garth, et al.*, does not teach, show, or suggest an apparatus for testing a substrate, comprising means for producing a particle beam, means for deflecting the particle beam on a specific location of the substrate, a detector for detecting secondary particles emitted on the substrate by the particle beam, and an arrangement for evaluation of the detector signal, characterized in that a control arrangement is provided which is connected to the means for deflection of the particle beam and the means for evaluation of the detector signal can be controlled in such a way that the location of the emitted secondary particles relative to the position of the detector is taken into consideration during the evaluation of the detector signal, as recited in claim 44 and claims dependent thereon. Withdrawal of the rejection of claims 44 and 45 is respectfully requested.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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